

Remarks

Claims 1 and 3-12 are pending in the application. The Applicants note with appreciation that claim 10 has been allowed.

§ 103 Rejections

Claims 1 and 3 stand rejected under 35 U.S.C. § 103(a) as being obvious over European Patent EP 0 658 949 B1 (the “EP Patent”) in view of Japanese Patent Publication JP 2000208144 (the “’144 Publication”). For the reasons set forth below, reconsideration and withdrawal of this ground of rejection is respectfully requested.

Independent claim 1 now recites:

A gastight-sealed alkaline nickel/metal hydride button cell storage battery comprising positive and negative electrodes arranged in a button cell case and separated by a separator, wherein both electrodes have a support and conductor framework, which includes a porous metal foam or metal felt, and wherein the positive electrode contains active material, but on a side bearing against the cell case, has a metallic region which is free of active material, and extends over greater than 5% to about 15%, of the total thickness of the positive electrode. [emphasis added].

Thus, claim 1 now specifically recites that a region of the positive electrode is free of active material, such region extending “greater than 5% to about 15%, of the total thickness of the positive electrode.” As discussed in detail below, neither the EP Patent nor the ‘144 Publication disclose or suggest such a device.

The EP Patent teaches a button cell 1 which includes a positive electrode 4 made of an open-pore nickel foam, and a negative electrode 6 (See Fig. 1). As helpfully pointed out by the Examiner at page 2 of the Office Action, the EP Patent fails to disclose, teach or suggest a positive electrode with a region free of active material.

The '144 Publication teaches a battery electrode substrate 1 including a first layer 5 which includes active material 3, and a second layer 6 which includes no active material. The '144 Publication nowhere discloses, teaches or suggests that the active (5) and non-active (6) regions of the electrode 1 should be in any particular proportions, let alone the specific proportions recited in claims 1 and 3. In sharp contrast, it appears that the proportion between the active (5) and non-active (6) areas disclosed by the '144 Publication lie in a range closer to 50% active - 50% non-active.

At any rate, it is clear that the '144 Publication fails to disclose, teach or suggest a battery which includes a positive electrode with an active portion in a range from 85% to less than 95% of the total thickness of the electrode, and a corresponding with a non-active portion in a range from "greater than 5% to about 15%," as recited in claim 1. Therefore, reconsideration and withdrawal of this ground of rejection with respect to claim 1 is respectfully requested.

With respect to claim 3, a battery with positive electrode with a non-active area of "about 10%" of the total thickness of the positive electrode is recited, corresponding to an active area about 90% of the total positive electrode thickness. As noted above, the '144 Publication nowhere discloses, teaches or suggests a specific range or proportion for active and non-active areas of a battery electrode. Accordingly, for this additional reason, reconsideration and withdrawal of this ground of rejection with respect to claim 3 is also requested.

Claims 1 and 3 also stand rejected under 35 U.S.C. § 103(a) as being obvious over the EP Patent in view of U.S. Pat. No. 5,981,108 (the "'108 Patent"). For the reasons set forth below, reconsideration and withdrawal of this ground of rejection is respectfully requested.

As discussed above, the EP Patent fails to disclose, teach or suggest a positive electrode with a region free of active material.

The Examiner helpfully points to the ‘108 Patent for the teaching of a battery electrode with active and non-active regions in a particular proportion. The particular proportion disclosed by the ‘108 Patent is arguably from 1% to 5% non-active material, preferably 3% (see col. 3, lines 1-6). The ‘108 Patent never discloses, teaches or suggests a proportion of non-active material greater than 5%, as recited in claim 1 (emphasis added). Additionally, the ‘108 Patent never discloses or suggests a proportion of non-active material of about 10%, as recited in claim 3 (emphasis added).

With regard to claim 1, it is submitted that the claimed range of non-active material from “greater than 5% to about 15%” of the total thickness of the positive electrode is important. Particularly, the Applicants’ invite the Examiner’s attention to the Applicants’ specification which recites in pertinent part:

The particular design of the positive electrode, which produces good electrical connection between the electrode [(4)] and the cell case [(1)], significantly increases the load-bearing capacity of the cells (page 6, lines 9-13) [emphasis added].

To establish a prima facie case of obviousness, there must be some teaching, suggestion or motivation in the prior art to make the specific change made by the applicant. In re Dance, 160 F.3d 1339, 1343 (Fed. Cir. 1998). Obviousness should be measured “at the time the invention was made” (i.e. the filing date of the application), and with no prior knowledge of the applicant’s disclosure. In re Dembiczak, 175 F.3d 994, 998-999 (Fed. Cir. 1999).

Obviousness cannot be established by hindsight combination to produce the claimed invention. In re Dance, 160 F.3d. at 1343. The Examiner must show reasons why the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed

invention, would select the elements from the prior art references for combination in the manner claimed. In re Rouffet, 149 F.3d 1350, 1357 (Fed. Cir. 1998).

In the present case, there is no teaching, suggestion or motivation in either the EP Patent or the '108 Patent to select an electrode with a non-active portion over 5% of the total electrode thickness, as now recited in claim 1 (emphasis added). Accordingly, reconsideration and withdrawal of this ground of rejection with respect to claim 1 is respectfully requested.

With regard to claim 3, the case law concerning the patentability of ranges is explicitly clear that if a prior art range and a claimed range are not 'close' and/or do not overlap, there can be no rejection of the claimed range based on obviousness. See, M.P.E.P. § 2144.05 (Feb. 2003). Since claim 3 specifically recites a range of non-active material of "about 10%," and since the '108 at best discloses a range of non-active material of 5% or less, reconsideration and withdrawal of this ground of rejection is respectfully requested.

Claims 4-6 stand rejected under 35 U.S.C. § 103(a) as being obvious over the EP Patent in view of the '108 Patent, and further in view of Japanese Patent JP 61-216629 (the "Japanese Patent"). For the reasons set forth below, reconsideration and withdrawal of this ground of rejection is respectfully requested.

As discussed above, neither the EP Patent nor the '108 Patent disclose or suggest a storage battery with positive and negative electrodes, wherein the positive electrode includes a "region which is free of active material, and extends over greater than 5% to about 15%, of the total thickness of the positive electrode," as recited in claim 1. Since claims 4-6 are all dependent upon claim 1, reconsideration and withdrawal of this ground of rejection is also requested.

Claims 7-9 stand rejected under 35 U.S.C. § 103(a) as being obvious over the EP Patent in view of the '108 Patent, and further in view of Hara et al. (U.S. Pat. No. 4,587,180). For the reasons set forth below, reconsideration and withdrawal of this ground of rejection is respectfully requested.

As discussed above, neither the EP Patent nor the '108 Patent application disclose or suggest a storage battery with positive and negative electrodes, wherein the positive electrode includes a "region which is free of active material, and extends over greater than 5% to about 15%, of the total thickness of the positive electrode," as recited in claim 1. Since claims 7-9 are all dependent upon claim 1, reconsideration and withdrawal of this ground of rejection is also requested.

Claims 11 and 12 stand rejected under 35 U.S.C. § 103(a) as being obvious over the EP Patent in view of the '108 Patent, and further in view of Kohler et al. (U.S. Pat. No. 5,800,947) and Sugalski (U.S. Pat. No. 4,529,675). For the reasons set forth below, reconsideration and withdrawal of this ground of rejection is respectfully requested.

As discussed above, neither the EP Patent nor the '108 Patent disclose or suggest a storage battery with positive and negative electrodes, wherein the positive electrode includes a "region which is free of active material, and extends over greater than 5% to about 15%, of the total thickness of the positive electrode," as recited in claim 1. Since claims 11 and 12 are both dependent upon claim 1, reconsideration and withdrawal of this ground of rejection is also requested.

In view of the foregoing remarks, Applicants submit that this application is in condition for allowance at an early date, which action is earnestly solicited.

Respectfully submitted,

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